

Measuring the ignition lock circuit

As an example for this task, the ignition lock circuit of the Alfa Romeo Montreal is shown in fig 1. For more details, consult the complete diagram. The circuit is protected by two fuses.

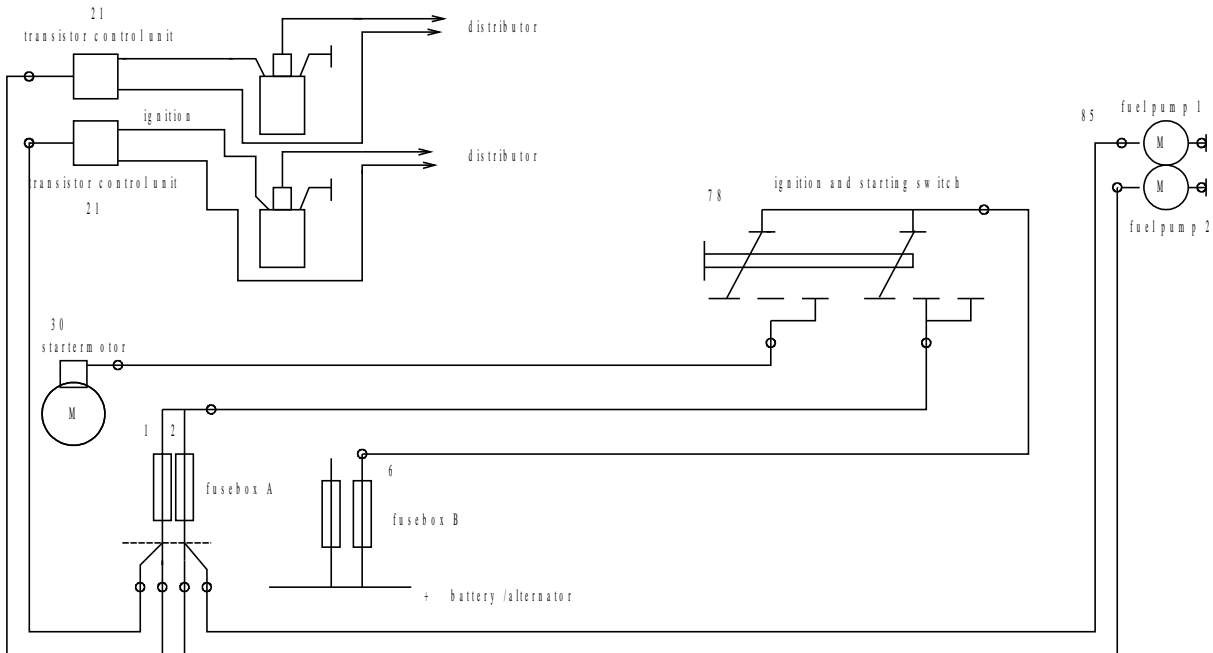


Fig. 1 Partial diagram of the ignition lock circuit

Assignment

1. Using your demonstration car, check to see how the ignition lock is connected. Use the demonstration car's electrical diagram for this. Locate the various components.
2. Draw your own partial diagram of the ignition lock circuit and mark the measurement points for the task.
3. If desired, add simple malfunctions to the circuit on the car such as:
 - broken wire
 - poor ground connection
 - burnt-out fuse or wrong amp fuse
 - extra resistance at the switch

Make sure that the measurement points are accessible for the students.

As an example, figure 2 shows a number of measurement points in the circuit along with a number of measurement tasks.

Here, the negative probe on the multimeter must be connected to the negative pole of the battery.

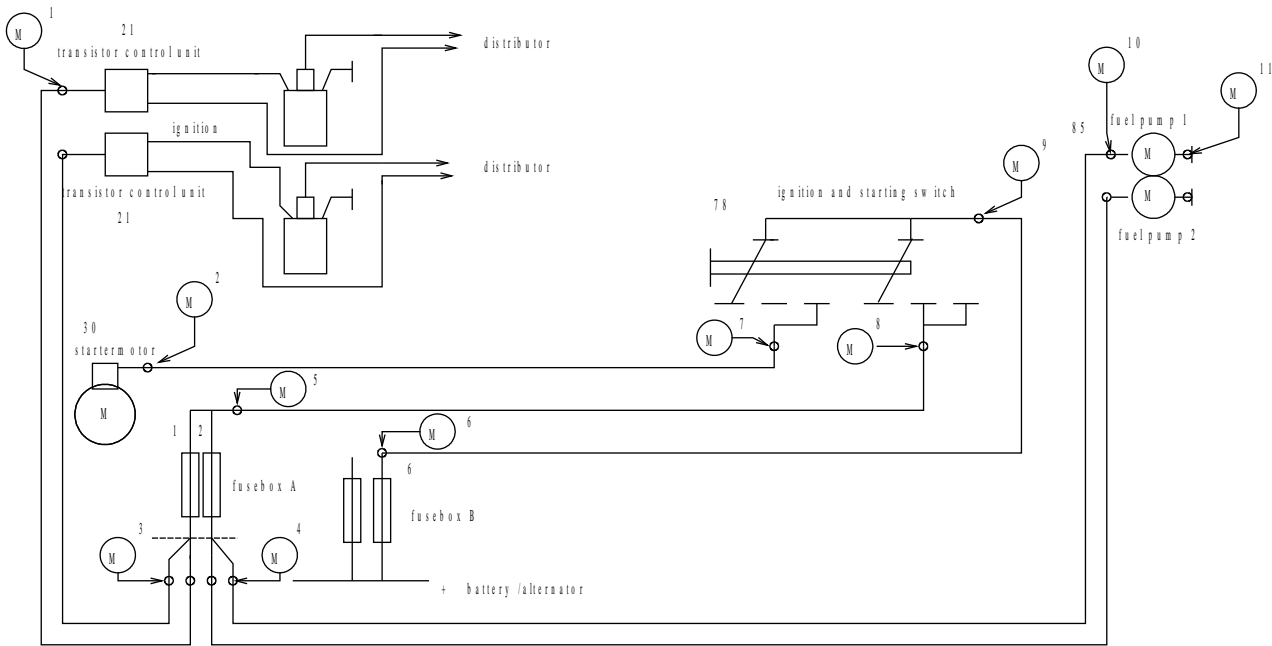


Fig. 2 Ignition lock circuit diagram with possible measurement points

Measurement tasks

Fill in the chart below with voltmeter readings in the following situations:

- situation 1: no key in the ignition lock
- situation 2: the ignition lock is in the 'contact' position

Remove the positive wire leading to the starter motor relay

situation 3: the ignition lock is in starting position

	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11
situation 1											
situation 2											
situation 3											

Conclusions:

The measured values in situation 1 are normal / abnormal
If they are abnormal, give a possible cause.

The measured values in situation 2 are normal / abnormal
If they are abnormal, give a possible cause.

The measured values in situation 3 are normal / abnormal
If they are abnormal, give a possible cause.